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United States Department of Agriculture

Conservation ( )

Montana Agricultural Experiment Station

Bozoman,

# MONTANA WATER SUPPLY OUTLOOK

TIKA 214

Snowpack and Streamflow Forecasts as of March 1, 1983



The Montana Water Supply Outlook is a publication of the U.S. Soil Conservation Service. The SCS administers the Cooperative Snow Survey Program in cooperation with other federal, state and private agencies, organizations, and individuals.

The report is prepared by SCS, Snow Survey and Water Supply Forecast Staff, P.O. Box 98, Bozeman, Montana.

COOPERATIVE SHOW SURVEYS Formalis the boss dato
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UNITED STATES DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE POTEMAN, MONTANA 59715 FEHALT FOR FEIVALFUST 5300

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#### Winter storms by-pass Montana

Most storms during February continued to travel both south and north of Montana. Nearly all mountainous areas continue to show less than average water stored in the snowpack.

In some parts of central Montana, the snowpack is only two-thirds of average. The Red Rock River drainage in the extreme southwestern corner is the only area having above average snow. This area has been receiving moisture from the edge of major storms tracking south of Montana.

Many low elevation areas and south-facing slopes are bare of snow, and soils in foothills and lower elevations are becoming frost-free. Mountain snowfall during the next 2 months will be very critical to Montana's spring and summer water supply.

#### Warm winter

Preliminary information provided by the National Meather Service indicates that some locations in south central Montana and adjacent areas in Myoming had the warmest winter (December, January and February) on record. The area east of the Divide was not the warmest of record but was well above normal. Most stations averaged 10 to 15 degrees (F) above long-term normals. Temperatures west of the Divide had somewhat less departure but were still above the long-term normals.

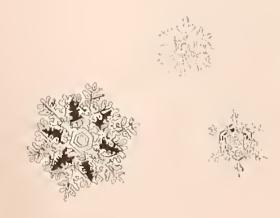
Most Montanans will agree that this has been "one of the best winters ever" for temperatures and valley snowfall.



## Streamflow forecasts below average

The southwest and northwest corners of the state will have near average runoff this spring and summer. The central part of the state is predicted to have very low runoff.

Irrigation water shortages are expected to develop by late June to early July in most areas. The severity of these shortages will be very dependent on mountain snowfall in the next 2 to 3 months and weather patterns developing the remainder of this season.





# Yellowstone River Drainage

STREAMFLOW FORECASTS	THIS TEAR	V	1+1:7:40	7 (15 )		PAST	PICOND
	FORE CARE		1,0 (7)	1 041		111005410	AUGU ETET
DASHESTELAN #8 + LON CASE POINT	Transmit to the said		1	Thousand Rise Fere	Astronyl	L + II 1 + e-	A+1+01+
of 6 Mg	April	- September	er		April	- July	
YELLOWSTONE RIVER at Corwin Springs YELLOWSTONE RIVER near Livingston BOULDER RIVER at Dig Timber STILLWATER near Absarckee (1) CLARKS FORK RIVER near Belfry ROCK CREEK near Red Lodge INFLOW COOMEY RESERVOIR near Boyd (2) YELLOWSTONE RIVER at Billings BIGHORN RIVER near St. Xavier (3) LITTLE BIGHORN RIVER near Bardin TONGUE RIVER near Decker YELLOWSTONE RIVER at Niles City (4) POWDER RIVER at Hoorhead YELLOWSTONE RIVER near Sidney (5)	340 82 565 86 512 80 Streamflow 56.5 88 4060 87 1645 81 165 84 224 78 5710 80 174 69	2497 measuremen 5171 2116 112	2,102 2,471 416 660 644	1560 1770 310 480 450 discont 46.0 3420 1510 145 204 5000 162 5440	89 86 81 86 80 inued b 88 86 81 83 78 80 69 80	1978 y USGS 4307 1693 96.6	1,749 2,048 382 555 564 91.4 52.5 3,979 1,861 174 263 6,243 234 6,805



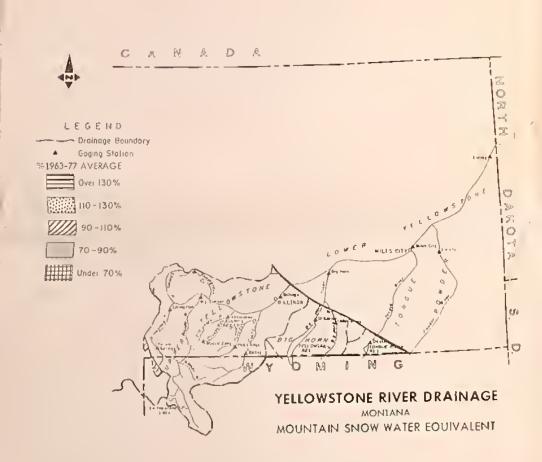
(1) Adjusted for storage in Mystic Lake.
(2) Adjusted for storage in Gooney Reservoir.
(3) Adjusted for storage in Buffalo Bill, Boysen, Bull Lake,

(3) Adjusted for storage in Build Lake, Buffalo Bill, Boysen, Pilot Butte and Bighorn Reservoirs.

(4) Adjusted for storage in Bull Lake, Buffalo Bill, Boysen, Pilot Butte, Highorn and Tongue River Reservoirs.

(5) Adjusted for reservoirs abovn in (4) and diversions into the Lower Yellowstone Caoal.

ALL FORECASTS PREPARED IN COOPERATION WITH THE NATIONAL WEATHER SERVICE



## WATER SUPPLY OUTLOOK E-S-111 of Poor, Fill, Assisting En-

	200104	244600
Yellowstone at		
Livingston	Avg	Fair
Shields	Fair	Poor
Boulder	Fair	Fair
Sweetgrass - Big		
Timber	Fair	Poor
Stillwater	Fair	Fair
Rock Creek	Fair	Fair
Clark's Fork	Fair	Fair
Yellowstone above		
Bighorn	Fair	Fair
Bighorn	Fair	Fair
Little Bighorn	Fair	Fair
Tongue	Fair	Poor
Powder	Fair	Poor
Lower Yellowstone	Fair	Fair

## Yellowstone snowpack remains low

All headwater areas have below average snowpack. Most drainages show only two-thirds to threequarters of the average amount of water stored in their snowfields.

Nost of the drainages above the Bighorn River have snowpack percentages similar to those reported last month, while those in Wyoming have decreased.

South-facing slopes and lower elevation areas have little or no snow remaining. Soils are thawing and will soon be able to absorb rainfall and snowmelt.

Snovfall during the next 25 months will be very significant in determining the season's water supply. Continuation of present weather trends could mean water shortages in many areas.

## Runoff forecast below average

Spring and summer runoff is forecas to be 10 to 15 percent less than average on the Yellowstone River and upstream tributaries. The Bighorn River and downstream tributaries will have even less

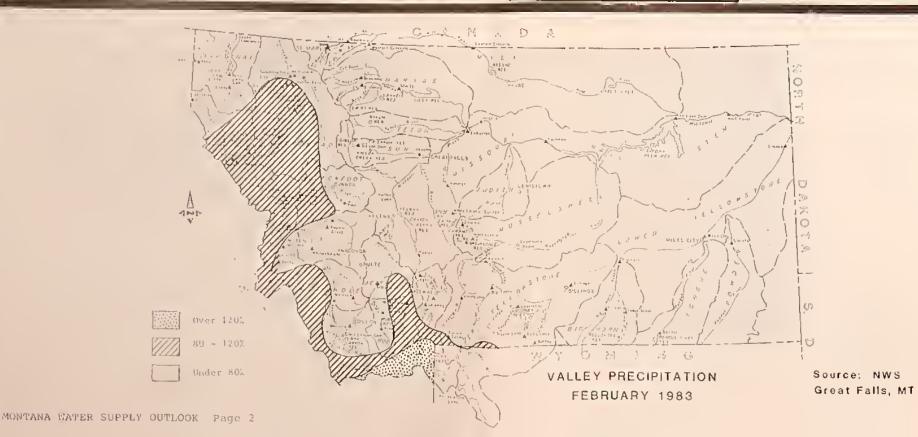
Early season runoff will be below average due to low elevation snowpack shortages. Streamflows will also begin to drop earlier than normal due to below average high elevation snowpack.

Irrigation water supply shortages will develop by late June and July and continue through the irrigation season. The overall impacts of these shortages will be very dependent on the snowfall received over the next 2 to 3 months.

Irrigators that do not have stored water and that have later water rights may want to consider their cropping patterns or utilizing other alternatives to minimize the impacts of a short water supply.

#### SUMMARY OF SHOW MEASUREMENTS

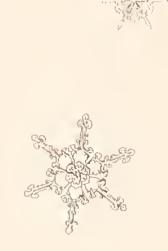
RIVER BASIN	Number of Court #1		AR'S SHOW PERCENT OF
SUB-WATERSHED	Averaged	Last Aug	Average +
Upper Yellowstone	9		
ab Livingston	21	75	76
Shields	. 8	87	74
Boulder &			
Stillwater	. 4	73	66
Rock Creek &			
Clark's Fork	. 17	90	82
Yellowstone (ab			
Bighorn River)	. 50	81	77
Bighorn/Wyoming	. 26	79	79
Little Bighorn .	. 3	128	81
Bighorn (Total)	. 29	82	79
Tongue	. 5	113	83
Powder		94	79
Yellowstone			
(Total)	. 90	84	79



# Missouri River & Hudson Bay Drainages

STREAMFLOW FORECASTS	1105	11.45		Wr COIS	11115 7	ran -	8.01	1 COND
	1	FAVI	10002 10	Mai el el	1 021 6	i	LEGUSONO /	
BASIN STREAM and at 1 CRECAST POINT	Enzyeand	1 10 -10*		*	1	Project of Accord	CHILLE	A++ 1g+
P14.72	1111111	April	Septemb	er			· July	
RED ROCK RIVER near Monida (1)	129	117	150	110	123	119	135	103
BEAVERHEAD RIVER near Grant (2)	179	105	228	171	160	108	194	148
BEAVERHEAD RIVER at Barratts (2)	230	102		226 105	202	103		196
RUBY RIVER near Alder	105	100 82		792	90.0	101		89.0
BIG NOLE RIVER near Melrose	650	ാം വിഡെ നല്	surement:	103	600 discont	82		730
BOULDER RIVER near Boulder	19.9	93		21.5	18.0	94		96.7 19.2
MADISON RIVER near Grayling (3)	526	101	584	523	416	102	456	409
MADISON RIVER near McAllister (4)	85.5	96	1024	892	686	97	797	706
GALLATIN RIVER near Gateway	490	86	592	572	422	86	503	488
INFLOW MIDDLE CREEK RESERVOIR near Bozeman (5)	22.7	75		30.3	19.6	75		26.2
HYALITE CREEK near Bozeman (6)	35.8	76 72		47.4 649	31.2	76		41.0
GALLATIN RIVER at Logan	470 2230	83	3470	2,671	412 1940	74 83	2070	557
MISSOURI RIVER at Toston (7)	14.0	61	24.5	22.8	12.0	61	3072 21.0	2,330 19,8
SHEEP CREEK ugar White Sulphur Springs	3.55	61	596	580	320	60	544	529
BELT CREEK mear Monarch	83.0	57		146	75.0	56	2 7 7	134
MISSOURI RIVER at Fort Benton (9)	3185	77		4,148	2800	77		3,640
TWO NEDICINE CREEK near Browning (10)	190	73		259	180	74		244
BADGER CREEK near Browning	95.0	71 70	521	133 577	81.0	70		116
MARIAS RIVER near Shelby	402 3615	75	24.	4,793	372 3180	70	494	532
MISSOURI RIVER at Virgelle (11)	4000	77		5,214	3520	75 77		4,238
NISSOURI RIVER near Landusky (11)	3.2	50		6.4	2.7	49		4,586 5.5
SOUTH FORK NUSSELSHELL RIVER above Martinsdale	30.5	50		61.5	29.0	50		57.6
MISSOURI RIVER below Fort Peck Dam (11)	3700	75		4,929	3290	75		4,381
MILK RIVER at Eastern Crossing*	269	97		278				
MILK RIVER at Eastern Crossing (12)*	88.8	80		111				
INFLOW LAKE SAKAKAWEA, ND (11)	10360	77		13,450	9430	77		12,239
SASKATCHEWAN RIVER BASIN	101	95	133	132	100	0=		
SWIFTCURRENT CREEK at Sherburne (13)	126 476	95	100	498	109 411	95 96	117	115 426
ST. MARY'S RIVER mear Babb (13)	410	,,,		170	411	30		440





Snowpack

#### \*March-September forecast

- (1) Adjusted for storage in Lima
- Reservoir.
  (2) Adjusted for storage in Lima and
- Clork Canyon Reservoirs.
  (3) Adjusted for atoroge in Rebgen
- Eake.
  (4) Adjusted for atoroge in Hebgen
- Lake and Emils Lake.
  (5) Sum of West Fork Byalite Creek and East Fork Byalite Creek above the
- Reservoir.
  (6) Adjusted for storage in Hiddle
- Creek Reservoir.

  (7) Adjusted for storage in Lime, Hebgen, Ennis & Clark Conyon Reservoirs.

  (8) Adjusted for storage in Gibson
- (9) Adjusted for storage in Limo. Clark Canyon, Hebgea, Ennis, Gib-son, Pishkun, Willow Creek &
- Conyon Firry Reservoirs.
  (10) Adjusted for storage in Two Healt cine Reservoir & diversions in Two Medicine Canal.
  (11) Adjusted for all upstream
- (12) Flow at Enatern Crossing
- minus St. Hory's Conal. (13) Adjusted for storoge in Loke Sherburne.
- ALL FORECASTS PREPARED IN COOPERATION WITH THE NATIONAL WEATHER SERVICE

#### WATER SUPPLY OUTLOOK Empraised as 'Poor, Fail, Astraga, Es

STREAM or AREA	Speling	Le-e 54+100
Beaverhead	Avg	Avg
Ruby	Avg	Avg
Big Hole	Avg	Fair
Boulder	ıΛvg	Fair
Jefferson	Avg	Fair
Madison	Avg	Avg
Gallatin	Avg	Fair
West-Side Missouri	Avg	Fair
Smith-Belt	Fair	Poor
Sun	Fair	Poor
Teton	Fair	Fair
Marias	Fair	Fair
Judith	Fair	Poor
Mosselshell	Fair	Poor
Milk	Fair	Fair
Bear Paws	Fair	Fair
St. Mary's	Avg	Avg
*		

# Missouri runoff

# below average

Runoff during the coming spring and most areas. Only the drainages in southwest Montana and the St. Mary's River, originating in Glacier National Park, have near average runoff forecasted.

All other streams will have lower than normal early season flows due to lack of low elevation snow. Streamflows will start dropping earlier than usual due to higher elevation snow shortages. Irrigation water supply shortages will begin developing by late June and early July continuing through the irrigation

The extent and severity of these the mountain snowfall over the next

Irrigators not having stored water and with late water rights should consider alternatives that will minimize the impacts of deficient water supplies.

#### SUMMARY of SHOW MEASUREMENTS

Missouri Headwater 124

Missouri Main-stem 22

Judith Musselshell 14

Missonri (Total) 174

Alberta ...... 11 91

West-side Hissouri

(Toston-Cacade)

Smith-8elt-Arrow

Teton & Sun ....

Marias-Teton-Sun

MiIk .....

Saskatchewan St. Mary's .....

8ow River in

Under 70%

Bear Pavs ..

Marjas ......

#### percentages drop The warm and dry weather pattern of January has continued into February. The snowpack percentages have de-Big Hole ..... creased this past month in most areas. Boulder ..... Jefferson .. The present snowpack varies from Madison ..... near average in the extreme southwest to about two-thirds average in the Gallatin ......

facing slopes continue to have little or no snow cover due to mild temperatures. Soils in some areas have thawed or are close to thawing. The amount of snowfall deposited on the mountain watersheds over the next

headwaters of most drainages flowing

into the Missouri River below Three

Forks. Low elevations and south-

2 months will be very critical in determining this season's potential water supply. If present weather patterns continue, mid and late season water supplies will be critical in mony areas.

C-LA N A D A



MOUNTAIN SNOW WATER EQUIVALENT

MONTANA WATER SUPPLY OUTLOOK Page 3

# SNOW SURVEY DATA

SNOW March 1, 1983			THIS YEAR			RECORD
BRAINAGE BASIN MT or SHOR COURSE		Onia gl Syrvai	Sna+ Death	Water Content		leat I to chill
наче	Elevation	gl Syrvay	(Jechit)	Jinchell	Latt Year	Antonto
ABUNDANCE LAKE	8800	2/25	5.2	15.9	22.2	18.9
	6480	5/55	3.5	9.4	12.9	11.9
AMOROSE	7350	2/28	31	7.8	10.4	11.2
ARCH FALLS	4820	2/25	19	4.8	7.6	1146
ASHLEY DIVIDE	4000	2/25	17	4.9	6.5	
ASHLEY LAKE	6900	5/53	66	24.3	38.0	34.7
BADGER PASS		2/23	5 P	20.9	34.2	36.7
BADGER PASS PILLOW	6900		106	42.9	59.2	54.4
BALO EAGLE PEAK	5700	2/25	32	8.6	10.3	56.1
BALO RIDGE	7500	2/24	55	20.3	24.2	11.5
BANFIELD MOUNTAIN	5600	2/25				55.9
MANFIELD MOUNTAIN PILLOW	5600	2/25	5 P	18.1	21.3	19.4
BAREE CREEK	5500	2/24	97	38.9	45.4	43.8
BAREE MIDWAY	4600	2/24	8.3	30.6	34.1	34.0
BAREE TRAIL	3800	2/24	1 4	4.8	8.6	10.0
BARKER LAKES PILLOW	8250	3/01	SP	14.6	13.2	-
BASIN CREEK	7180	2/25	29	7.4	8.6	7.0
DASIN CREEK PILLOW	7180	3/01	SP	6.1	7.2	-
BASSOO PEAK	5150	3/01	2.1	7.2	7.7	9.6
BEAGLE 5PRINGS	8850	5156	3 1	7.0	9.7	
BEAGLE SPRINGS PILLOW	8850	3/(/1	5 P	5.9	8.7	-
BEAR BASIN	8150	5/55	5.8	16.2	19.1	19.5
	5200	2/28	1.2	3.8	6.4	
	5900	2/23	4 1	13.4	23.4	6.3
BEAVER LAKE	7300	2/28	2.2	6.2		21.9
BERRY MEADOW			15		7.8	7.2
DIG COULEE	5100	2/28		4.3		5.6
DIG CREEK	6750	2/23	100	38.3	38.6	39.4
FIG SKY	7700	2/28	50	12.6	15.2	13.8
BIG SKY MEADOW	6350	5/55	3.5	7.8	9.8	3.6
BIG SNOWY	7150	5/55	44	12.5	13.8	19.0
ILACK BEAR	7950	2/24	103	39.7	44.4	35.1
LACK BEAR PILLOW	7950	2/24	SP	32.4	38.8	32.2
LACK MOUNTAIN	7750	5/53	3.8	11.2	14.0	-
LACK PINE	7100	2/24	3 1	9.0	14.4	13.2
LACK PINE PILLOW	7100	2/26	SP	8.6	15.1	13.8
LOODY DICK	7600	2/24	3.7	10.5	16.7	12.9
LOODY DICK PILLOW	7600	2/24	SP	9.3	14.2	16.
LUE LAKE	5900	2/23	4.8	17.0	24.2	25 0
01S 501S	8000	2/23	26	5.8		25.9
	7950	2/23			5.0	6.6
OULDER MOUNTAIN			4.6	14.4	18.0	17.1
OULDER MOUNTAIN PILLOW	7950	3/01	S P	16.8	50.0	-
OX CANYON	6670	2/25	26	7.2	10.6	12.1
OX CANYON PILLOW	6670	3/01	\$ P	5.3	7.2	-
OKELDER CREEK	5100	5/58	1.8	5.6	-	6.8
RANHAM LAKES	8850	5/58	80	52.5	29.8	26.2
RIDGER BOWL	7250	2/24	5 4	16.5	20.1	24.9
RIDGER BOWL PILLOW	7250	2/24	S P	15.6	19.1	23.7
RISTOW CREEK	3900	2/25	24	9.0	12.2	12.6
RUSH CREEK IIMBER	5000	2/28	27	7.6	10.0	9.5
ULL MOUNTAIN	6600	2/24	2 1	5.8	6.2	4.9
AOIN CREEK	5200	5/56	11	3.2	6.3	
ALL ROAD '	8050	2/25	39			6.6
ALVERT CREEK	6450	2/25	37	9.6	9.2 13.3	10.2
HI DERI LIKEFA				V 13		1 6

SHOW March 1, 1983			THIS TEAR		PAST	ECORO
ORAINAGE BASIN and for SHOW COURSE					Rijas Conii	
NAME	Elevation	Onth of Survey	Shem Orath (Inchas)	Wite-Content (Inches)	Carr Yrac	Astraja
FLATTOP MOUNTAIN PILLOW	63.00	3/01	SP	39.1	41.9	44.5
FLEECER RIDGE	7500	2/24	3.0	8.4	12.0	10.1
FOOLHEN	8280	2/25	4.3	12.0	16.7	15.6
FOUR MILE	6900	2122	5.9	7.8	5.6	7.7
FOURTH OF JULY	3450	8515	2.5	7.6	7.6	_
FRED BURR PASS	8000	2/25	5.3	17.4	25.0	22.9
FRETGHT CREEK	6000	2/23	2.9	8.7	15.9	14.1
FRIDAY HILL	4620	2/28	6.2	22.4	19.0	_
FROHNER MEADOWS	64.80	2/24	24	6.6	6.4	7.5
FROHNER MEADOWS PILLOW	6480	2/24	SP	6.3	7.5	8.0
GARVER CREEK	4250	2/25	2.8	10.3	11.8	11.4
GARVER CREEK PILLOW	4250	2/25	SP	9.4	9.3	10.3
GIBBONS PASS	7100	2/28	66	21.3	26.8	21.2
GOAT MOUNTAIN	7000	2/27	19	5.5	10.3	10.1
GOLD CREEK LAKE	7200	5/55	3.8	10.9	14.1	14.0
GOLD STONE	8100	2/24	44	12.9	21.0	15.5
GRASSHOPPER	7000	5155	18	4.2	4.8	5.3
GRAVE CREEK	4300	2/25	49	18.2	16.4	17.5
GRAVE CREEK PILLOW	4300	2/25	SP	16.2	17.7	17.4
GRIFFIN CREEK DIVIDE	5150	3/01	2.8	8.2	11.9	10.9
GRIZZLY PEAK	8640	2/25	4.5	14.4	9.9	13.2
GUNSIGHT LAKE	6300	2/23	7.8	28.8	40.8	38.2
HAND CREEK	5030	5/58	3.5	9.6	12.9	11.8
HAND CREEK PILLOW	5030	3/01	SP	4.8	13.2	_
HAWKINS LAKE	6450	5/25	76	29.6	31.0	28.6
HANKINS LAKE PILLOW	6450	2/25	SP	25.0	26.1	27.5
HEART LAKE TRAIL	4800	5/56	43	15.4	8.05	21.1
HERGEN DAM	6550	3/01	5 0	13.0	11.6	11.2
HELL ROARING DIVIDE	5770	2/26	6.9	55.2	26.9	29.6
HERRIG JUNCTION	4850	2/23	69	9.55	25.0	-
HIGHWOOD DIVIDE	5650	2/28	5.5	7.2	-	9.1
HIGHWOOD STATION	4600	2/28	0	.0	_	4.4
HOLBROOK	4530	85/5	2.1	6.4	10.3	9.6
HOOD MEADOW	6600	2/28	24	6.1	9.1	9.7
HOODOO BASIN	6000	5/26	111	40.4	49.9	45.4
HOODOO BASIN PILLOW	6000	3/01	S P	36.0	46.1	44.0
HOODOO CREEK	5900	5/56	105	36.6	47.5	42.0
INDEPENDENCE	7850	2/25	3 9	10.8	15.8	17.1
INTERGAARD	6450	2/25	1.8	4.8	7.3	7.9
JACK CREEK	7500	2/23	2 5	5.3	4.2	4.9
JANNKE LAKE TRAIL	7200	2/24	3 1	8.4	12.8	9.1
JOHNSON PARK	6450	2/24	17	3.9	6.8	6.8
KEELER CREEK	33.00	2/25	3.0	11.3	14.7	14.6
KINGS HILL	7500	2/25	2.8	7.7	12.8	12.7
KISHEHEHN	3890	2/26	5.5	6.0	9.6	8.6
KIWANIS CAMP	3720	2/28	0	. 0	2.0	1.7
KRAFT CREEK PILLOW	4750	3/31	SP	11.1	15.5	-
LAKE CREEK	6100	2/25	3 4	8.3	6.7	9.5
LAKEVIEW CANYON	6930	2/25	4.1	12.8	6.7	10.8
LAKEVIEW RIDGE	7400	2/25	40	12.8	6.9	9.7
LAKEVIEW RIDGE PILLOW	7400	3/01	SP	13.9	7.6	_
LEMHI PASS	7480	5/56	5.6	5.2	8.8	8.1
LEMHI RIDGE	8100	2/26	3 1	6.4	10.8	8.9
LEMHI RIDGE PILLOW	8100	2/26	SP	6.2	10.5	9.0
LICK CREEK	6860	2/28	2.8	6.4	8.8	9.0
LICK CREEK PILLOW	6860	2/28	SP	5.5	7.7	8.6
LITTLE PARK	7400	,5155	4.7	11.7	15.0	114.6
LOGAN CREEK	4300	2/25	5.0	4.4	7.0	7.3

10W March 1, 1983		f	THIS YEAR		PAST II	
DRAINAGE BASIN and/or SMOW COURSE	Elevation	Onto of Survey	Snaw Droth (Inchail	Water Content (Inchat)	Lati Yaw	1
	Littaldi				CHITTED	Anconta
AMP MISERY	6400	5/24	106	40.8	44.0	43.9
CAMP SENIA	7890	5/23	5.0	3.8	2.4	5.1
CARROT BASIN	9000	2/28	9.6	31.6	32.6	32.7
CARROI BASIN PILLOW	9000	2/28	SP	25.4	24.0	24.2
CARTER CREEK	7400	8 2 / 5	1.7	4.4	-	4.3
ASHE CREEK PILLOW	7800	3/01	SP	7.8	7.3	-
EDAR GROVE	4100	2/25	8 S	9.0	12.2	12.0
HESSMAN RESERVOIR	6500	2/24	1.8	5.2	3.0	3.5
HICKEN CREEK	4060	5/53	3 9	12.0	15.6	-
LOVER MEADON	8600	2/25	5.1	14.4	14.6	14.9
LOVER MEADOW PILLOW	8600	3/01	5 0	10.3	15.1	_
OLE CREEK	7850	2/25	44	13.6	10.8	15.1
OLE CREEK PILLOW	7850	5/55	\$ P	13.3	9.6	15.0
OLLEY CREEK	6300	2155	2.3	3.9	7.9	8.1
OMOINATION	5600	5/53	1.5	4.2	5.6	5.6
WOLLIA NOITALIBMO	5600	2/23	SP	4.6	5.5	5.8
OOKE STATION	8150	2/24	5.2	15.4	19.1	18.0
COPPER OOTTOM	5200	2/26	2.3	7.7	12.7	11.5
ROJJIA MOTTOB RBAROS	5200	2/24	SP	8.0	13.1	13.0
OPPER CAMP	6950	5/26	62	21,1	32.0	29.8
COPPER CAMP PILLOA	6950	2/26	SP	21.7	35.2	37.2
COPPER CREEK	57.00	5/26	3.3	12.0	16.3	15.1
OPPER LAKE CREEK	6100	2/26	5.3	16.9	26.3	23.5
COPPER MOUNTAIN	7700	2/24	3.3	8.2	11.6	9.9
COTIONWOOD CREEK	64 00	2/23	2.0	5.2	7.0	8.0
COYOTE HILL	4200	2/25	26	7.7	11.1	10.0
CREVICE MOUNTAIN	84 00	2/25	3.1	7.6	9.6	7.8
CRYSTAL LAKE	6100	2/22	3.1	8.2	8.0	12.4
CRYSTAL LAKE PILLOW	6100	3/01	ŚP	8.3	8.6	
DAD CREEK LAKE	8400	2/26	3 9	9.8	14.0	11.6
DAISY PEAK	7600	2/24	29	6.2	11.1	10.0
DALY CREEK	5780	2/23	3.0	8.5	12.6	10.7
DALY CREEK PILLOW	5780	3/01	SP	8.9	13.4	
DV≰KIIOBSE TVKE	8600	2/25	5.7	18.8	30.4	25.2
DARKHORSE LAKE PILLOW	8600	3 / 0 1	SP	14.8	25.9	
DAVIS CREEK	54 (10	2/25	6.2	22.7	25.5	22.9
DEADMAN CREEK	6450	2/25	2.7	6.8	8.8	11.0
DEADMAN CREEK PILLOW	6450	5/25	SP	5.8	9.4	9.8
DESERT MOUNTAIN	5600	2/24	3.2	12.6	14.9	14.5
DEVILS SLIDE	8100	2/28	5.0	16.0	17.4	50.0
DISCOVERY BASIN	7050	2/24	2.6	6.8	10.4	9.9
LAIDE	7900	2/27	44	11.3	9.8	9.8
MOTITA BILLOM	7900	2/27	SP	9.9	10.3	10.1
OIX HILL	64 00	2/27	2.8	7.8	12.2	9.9
EAST FORK R.5.	5400	8515	1.8	4.6	8.2	6.8
L DORADO MINE	7800	5155	5.0	15.0	18.8	18.9
FIK HORN SPRINGS	7800	2725	2.8	6.6	9.4	8.5
LK PEAK	8000	5/55	3.7	10.3	13.2	14.9
MERY CREEK	4350	2/24	4.0	13.9	16.3	
MERY CREEK PILLOW	4350	2/24	SP	13.9	15./	14.0
Ally CREEK	5500	2/23	5.8	19.4	22.7	30.4
ISH CREEK	8000	2/25	3.1	8.8		50.4
TISHER CREEK	91.00	2/24	70	26.5	10.3	8.5
FISHER CREEK PILLOW	9100	2/24	SP	24.8	37.6	34.1
FIVE-MULL	57.00	5/26	31,	C4.0	33.1	33,3

DRAINAGE BASHI MAPAI SHOW COURSE		Onto	THIS YEAR	Water Content	PAST RI Wates Conta	
NATE	Elevation	of Suel #1	(Inchil)	(Inches)	Carr Yaw	Lineiny
ONE YOUNTAIN	2880	2/28	61	18.6	23.6	20.5
OST HORSE	5940	2/25	6.8	24.0	40.0	30.2
OST SOUL	4800	2/25	4.1	14.5	16.9	15.6
LOWER TWIN	7900	5/55	5.8	18.5	23.0	18.7
LOWER TWIN PILLOW	7900	3/01	5 P	18.3	17.6	_
LUPRECHT FLUME	4800	3/02	1.2	4.4	8.0	6.5
LUBRECHT FLUNE PILLOW	4800	3/01	\$ P	4.9	8.8	6.4
LUBRECHT FOREST # 3	5450	3/02	1.8	4.8	8.4	7.0
LUBRECHT FOREST 4 4	4650	3/02	6	5.0	5.0	3.5
LUBRECHT FOREST # 6	4040	3/02	6	2.3	6.2	4.0
LUGRECHT HYDROPLOT	4200	3/02	1.3	4.6	8.4	5.7
MADISON PLATEAU	7750	2/24	63	21.9	5.55	17.8
MADISON PLATEAU PILLOW	7750	2/24	SP	19.9	22.7	18.7
MANY GLACIER	4960	5/56	49	16.5	20.6	-
MANY GLACIER PILLOW	4960	3/01	\$ P	14.7	16.6	-
MARIAS PASS	5250	8515	3.8	14.1	50.0	16.
MAYMARD CREEK	6210	2/24	3.5	10.3	10.3	12.0
MAYNARD CREEK PILLOW	6210	2/24	SP	7.8	8.2	10.0
ALDDE WILL CREEK	7850	2/28	5 3	15.4	15.4	14.
TILL CREEK	7500	5/55	3 4	7.2	12.0	12.
ITNERAL CREEK	4000	5/26	4.6	15.4	18.4	17.
MONUMENT PEAK	8800	5/55	5.8	19.0	24.0	24.3
MONUMENT PEAK PILLOW	8800	3/01	5 P	13.6	19.0	-
MOUL TON RESERVOIR	6850	2/24	26	4.6	7.7	_
MOUNT LOCKHART	6400	8158	4.5	14.6	24.4	20.0
10UNT LOCKHART PILLOW	6400	5/58	SP	12.9	22.6	18.
1UDO LAKE	7650	5/25	5.4	17.2	24.2	18.
MULE CREEK	8300	2/25	40	10.7	16.5	-
MULE CREEK PILLOW	8350	3/01	SP	9.8	14.3	-
NEVADA CREEK	6480	5/56	34	9.5	13.8	_
NEVADA CREEK PILLOW	6480	3/01	SP	9.1	12.8	
JEW WORLD JEWTON MOUNTAIN	6700	2/23	37	9.8	11.2	13.
VEZ PERCE CAMP	5600 5650	5/58	94	34.5	31.6	
NEZ PERCE CAMP PILLOW		2/24	38	11.4	18.2	13.
NEZ PERCE CREEK	5650	2/24	5.2	10.6	18.0	
NEZ PERCE PASS	6500 6570	2/24	2 () 3 8	5.0	6.8	7.
OLSY BASIN	6040	2/24	102	11.7	19.5	15.1 39.4
101SY BASIN PILLON	6040	3/01		37.5	40.0	
IORIH FK. ELK CREEK	6250	3/02	S P	34.6	35.3	34.
FORTH FK. ELK CREEK PILLOW	6250	3/02	30	8.8	12.8	11.
ORTH FORK JOCKO	6330	2/27	S P 9 8	8.5	13.9 42.2	
IORTH MEADOW	7500	5/55	28	34.6		41.
ORTHEAST ENTRANCE	7400	3/03	25	7.8	6.2 8.3	9.
ORTHEAST ENTRANCE PILLOW	7400	3/01	S P	7.7	8.1	8.
OTCR	8500	2/27	5.5	10.2	12.4	13.
PHIR PARK	7150	2/27	44	14.4	17.2	17.
ETERSON MEADOWS	7700	2/24	25	6.5	8.8	9.
ETERSON MEADOWS PILLOW	7200	2/24	SP	6.6	8.8	9
ICKFOOT CREEK	6650	2/23	31	9.3	9.7	-
ICKFOOT CREEK PILLOW	6650	3/01	SP	7.9	9.0	_
IPESTONE PASS	7200	2/24	15	3.5	4.0	4 .
LACER JASIN PILLOW	8830	3/01	S P	10.2	12.8	٩.
OORMAN CREEK	5100	2/25	68	29.4	36.0	31.4
OORMAN CREEK PILLOW	5100	2/25	SP	24.2	32.9	20.

# SNOW SURVEY DATA Con't.

NOW March 1, 1983			THIS YEAR	_	PASIA	ECONO
ORAINAGE BASIN 2041 00 SHOW COURSE		Dita	SA1 - Oroth	Malay Content	Malla Conte	Anerata
NAME	Elevacion	pt Surves	(lechal)	(lechal)	Last Yest	Aserte
PORCUPINE	6500	2/24	20	5.0	6.0	6.
PORCUPINE PILLOW	6500	2/24	SP	5.5	5.7	-
POTOMAGETON PARK	7150	3/01	50	13.4	12.3	13.
REO MOUNTA [11	6000	3/01	5 4	16.8	18.2	17.
RED IOP	5260	2/28	77	27.0	26.4	_
ROCK CREEK	5600	5/55	25	6.8	6.6	8.
ROCK CREEK MEADOWS	8160	2/23	56	15.1	20.4	19.
ROCKER PEAK	8000	2/24	31	8.8	13.7	13.
ROCKER PEAK PILLOW	8000	2/24	3.1	9.6		13.
ROCKY BOY	4700	2/28	7		14.4	4.
ROCKY BOY PILLOW	4700	2/28		1.4	3.4	4.
SACAJAWEA	6550	2/24	S P	3.6	4.7	13.
SADDLE MOUNTAIN	7940		4.1	11.8	11.5	22.
ADDLE MOUNTAIN PILLOW	7940	2/28	67	21.6	28.6	23.
SENTINEL CREEK	8300	5/58	SP	21.3	29.4	21.
SHOWER FALLS		3/01	EST	21.2	20.0	21.
HOWER FALLS PILLOW	8100	5/58	5.2	16.4	19.1	21.
ILVER RUN	8100	3/01	SP	16.4	18.6	4.
ILVER RUN PILLOW	6630	2/25	1 6	4.6	1.2	4.
KALKAHO SUMMIT	6630	2/25	SP	3.7	2.7	7.7
KALKAHO SUMMIT PILLOW	7260	5/53	61	19.0	28.4	23.
	7260	3/01	S P	17.9	28.2	
KYLARK TRAIL PILLOW	6200	3/01	SP	23.1	35.1	-
	8750	5/25	66	53.5	29.7	24.
	7100	5/53	37	10.4	15.6	15.
NUGGLER MINE	6960	5/58	40	10.2	9.7	8.
OUTH FORK SHIELDS	8100	2/24	5.3	17.4	20.6	21.
OUTH FORK SHIELDS PILLOW	8100	2/24	SP	11.7	14.0	-
POTTED BEAR MOUNTAIN	7000	5/53	36	11.4	15.8	14.
PUR PARK	8100	2/25	4 1	12.4	20.3	19.
PUR PARK PILLOW	8100	5/55	SP	13.7	20.1	50.
TAHL PEAK	6050	2/25	9.5	34.0	34.3	36.
TAHL PEAK PILLOW	6050	5/55	SP	30.0	31.0	29.
IEMPLE PASS	6600	5/55	2.7	7.0	9.9	9.
TORM LAKE	7780	5/54	3.8	11.2	10.3	11.
TRYKER BASIN	6180	5/23	8 1	28.4	29.9	-
TUART MILL	6500	2/25	1.7	4.6	6.2	6.
TUART MOUNTAIN	7400	2/27	7.8	27.8	30.0	29.
UCKER CREEK	3960	8515	0	. 0	. 8	0.
AYLOR ROAD	4080	2/28	-0	. 0	3.0	3.
EN MILE LOWER	6600	2/23	2.5	6.4	5.8	6.
EN MILE WIDDLE	6800	2/23	3.1	7.8	9.6	10.
EN MILE UPPER	8000	2/23	3.3	8.8	11.3	12.
EPEE CREEK	8000	2/25	5.0	12.8	13.9	14.
EPEE CREEK PILLOW	8000	2/25	SP	12.0	11.3	11.
IMBERLINE CREEK	8850	2/23	44	12.2	8.8	13.
RAIL CREEK	7090	5/56	2.5	4.3	8.5	7.
RINKUS LAKE	6100	2/23	87	31.9	41.6	40.
RUMAN CREEK	4060	2/25	8	2.8	4.4	
V HOUNTAIN	6800	2/27	4.8	15.8	17.1	17.

TWELVEMILE CREEK TWELVEMILE CREEK TWELVEMILE CREEK PILLOW TWENTY-ONE MILE TWIN CREEKS TWIN LAKES TWIN LAKES TWIN LAKES PILLOW UPPER HOLLAND LAKE WALDRON WALDRON PILLOW WARM SPRINGS TWARM SPRINGS TWEASEL DIVIDE WEST TELLOWSTONE WEST YELLOWSTONE WEST YELLOWSTONE PILLOW WHISKEY CREEK WHISKEY CREEK WHISKEY CREEK PILLON WHITE MILL WHITE MILL WHITE PINE RIDGE WHILLOW CREEK WOOD CREEK WOOD CREEK	600 600 150 580 510 510 200 600 800 450 700 800 800 700 800 700 800 700	2/25 3/01 2/25 2/25 2/23 2/25 2/25 2/25 2/25 2/25	5-paw Orech (Incha1) 4 9 5 P 4 7 2 B 8 2 5 P 6 9 2 0 5 P 4 3 5 P 8 6 2 0 3 8 5 P 6 8 5 P 6 8 5 P 6 8	Wilso Centent	27.1 22.5 13.6 14.0 46.6 45.3 33.9 11.7 20.4 20.9 30.9 7.5 9.5 8.3 21.4 15.7 27.2 23.7	21.1 17.7 16.6 12.0 38.2 38.2 33.7 10.1 10.1 9.8 11.5 8.0 17.9 14.9 25.9 20.8
TWELVEMILE CREEK TWELVEMILE CREEK TWELVEMILE CREEK PILLOW TWENTY-ONE MILE TWIN CREEKS TWIN LAKES TWIN LAKES TWIN LAKES PILLOW UPPER HOLLAND LAKE WALDRON WALDRON PILLOW WARM SPRINGS TWARM SPRINGS TWEASEL DIVIDE WEST TELLOWSTONE WEST YELLOWSTONE WEST YELLOWSTONE PILLOW WHISKEY CREEK WHISKEY CREEK WHISKEY CREEK PILLON WHITE MILL WHITE MILL WHITE PINE RIDGE WHILLOW CREEK WOOD CREEK WOOD CREEK	600 600 150 580 510 200 600 600 800 800 450 500 7700 7700 7700 850	3/01 2/25 2/23 2/25 2/25 2/25 2/26 2/28 3/01 2/25 2/25 2/25 2/25 2/25 2/25 2/25 2/2	SP 4 8 2 8 9 9 0 8 8 9 8 8 9 8 8 9 8 8 8 8 8 8 8	12.9 13.6 9.8 29.6 29.7 23.6 6.2 7.1 12.8 14.4 31.6 5.2 10.4 8.4 14.6 21.4	27.1 22.5 13.6 14.0 46.6 45.3 33.9 11.2 11.7 20.4 20.9 30.9 7.5 9.5 8.3 21.4 15.7 27.2	21.1 17.7 16.6 12.0 38.2 38.2 33.7 10.1 10.1 10.1 8.0 17.9 14.9 25.0
TWELVEMILE CREEK PILLOW TWENTY-ONE MILE TWIN CREEKS TWIN LAKES TWIN LAKES TWIN LAKES PILLOW WARDRON WALDRON WALDRON WALDRON PILLOW WARM SPRINGS WARM SPRINGS WARM SPRINGS WARM SPRINGS TWEASEL DIVIDE WEST ROSEBUD WEST YELLOWSTONE WEST YELLOWSTONE PILLOW WHISKEY CREEK WHISKEY CREEK PILLON WHITE MILL WHITE MILL WHITE MILL PILLOW WHILOW CREEK WOOD CREEK	600 150 580 510 510 600 600 800 800 450 500 700 800 800 700 800 700 880	3/01 2/25 2/23 2/25 2/25 2/25 2/26 2/28 3/01 2/25 2/25 2/25 2/25 2/25 2/25 2/25 2/2	SP 4 8 2 8 9 9 0 8 8 9 8 8 9 8 8 9 8 8 8 8 8 8 8	12.9 13.6 9.8 29.6 29.7 23.6 6.2 7.1 12.8 14.4 31.6 5.2 10.4 8.4 14.6 21.4	22.5 13.6 14.0 46.6 45.3 33.9 11.7 20.4 20.9 30.9 7.5 9.5 8.3 21.4 15.7 27.2	17.7 16.6 12.0 38.2 38.2 33.7 10.1 10.1 9.8 11.1 8.0 17.9 14.9 25.0
TWENTY-ONE MILE TWIN CREEKS TWIN LAKES TWIN LAKES TWIN LAKES PILLOW OPPER HOLLAND LAKE WALDRON WALDRON PILLOW WARM SPRINGS WARM SPRINGS PILLOW WEST ROSEBUD WEST YELLOWSTONE WEST YELLOWSTONE PILLOW WHISKEY CREEK PILLON WHITE MILL WHITE MILL WHITE MILL PILLOW WHILLOW CREEK WOOD CREEK WOOD CREEK	150 580 510 510 200 600 600 800 800 450 500 700 800 800 800 800 800 700 800 8	2/25 2/23 2/25 2/25 2/25 2/26 2/26 2/25 2/25 2/25	47 82 89 60 80 80 80 80 80 80 80 80 80 80 80 80	13.6 9.8 29.6 29.7 23.6 6.2 7.1 12.8 14.4 31.6 5.2 10.4 8.4 14.6 21.4 19.0	13.6 14.0 46.6 45.3 33.9 11.7 20.4 20.9 30.9 7.5 9.5 8.3 21.4 15.7 27.2	16.6 12.0 38.2 38.2 33.7 10.1 10.1 9.8 11.1 8.0 17.9 14.9 25.0
TWIN CREEKS TWIN LAKES TWIN LAKES TWIN LAKES PILLOW UPPER HOLLAND LAKE WALDRON WALDRON WARM SPRINGS WARM SPRINGS WEASEL DIVIDE WEST ROSEBUD WEST YELLOWSTONE WEST YELLOWSTONE PILLOW WHISKEY CREEK WHISKEY CREEK WHISKEY CREEK PILLON WHITE MILL WHITE MILL WHITE MILL WHITE PINE RIDGE WILLOW CREEK WOOD CREEK WOOD CREEK	580 510 510 200 600 800 800 450 500 7700 800 800 800 700 800 800	2/23 2/25 2/25 2/25 2/26 2/28 3/25 2/25 2/25 2/25 2/25 2/25 2/25 2/25	28 82 89 60 80 80 80 80 80 80 80 80 80 80 80 80 80	9.8 29.6 29.7 23.6 6.2 7.1 12.8 14.4 31.6 5.2 10.4 8.4 14.6 21.4 19.0	14.0 46.6 45.3 33.9 11.2 11.7 20.4 20.9 7.5 9.5 8.3 21.4 15.7 27.2	12.0 38.2 38.2 33.7 10.1 10.1 9.8 11.1 8.0 17.9 14.9 25.0
TWIN LAKES  TWIN LAKES PILLOW  OPPER HOLLAND LAKE  WALDRON  WALDRON PILLOW  WARM SPRINGS  WEASEL DIVIDE  WESI ROSEBUD  WEST YELLOWSTONE  WEST YELLOWSTONE PILLOW  WHISKEY CREEK  WHISKEY CREEK PILLON  WHITE MILL  WHITE MILL  WHITE PINE RIDGE  WHILOW CREEK  WOOD CREEK  WOOD CREEK  6	510 510 200 600 600 800 800 800 700 700 800 700 800 700 850	2/25 2/25 2/26 2/28 3/01 2/25 2/25 2/25 2/25 2/25 2/25 2/25 2/2	82 SP 69 20 SP 43 SP 86 20 38 59 SP 68 SP	29.6 29.7 23.6 6.2 7.1 12.8 14.4 31.6 5.2 10.4 8.4 14.6 21.4	46.6 45.3 33.9 11.2 11.7 20.4 20.9 30.9 7.5 9.5 8.3 21.4 15.7 27.2	38.2 38.2 33.7 10.1 10.1 9.8 11.1 8.0 17.9 14.9 25.0
TWIN LAKES PILLOW  UPPER HOLLAND LAKE  WALDRON  WALDRON PILLOW  WARM SPRINGS  WARM SPRINGS PILLOW  WEASEL DIVIDE  WEST YELLOWSTONE  WEST YELLOWSTONE PILLOW  WHISKEY CREEK  WHISKEY CREEK PILLON  WHITE MILL  WHITE MILL PILLOW  WHITE PINE RIDGE  WHILOW CREEK  WOOD CREEK  WOOD CREEK  6	\$10 200 600 600 800 800 450 500 700 700 800 800 800 800 800	2/25 2/26 2/28 3/01 2/25 2/25 2/25 2/25 2/25 2/25 2/25 2/2	SP 69 20 SP 43 SP 86 20 38 59 SP 68 SP	29.7 23.6 6.2 7.1 12.8 14.4 31.6 5.2 10.4 8.4 14.6 21.4	45.3 33.9 11.2 11.7 20.4 20.9 30.9 7.5 8.3 21.4 15.7 27.2	38.2 33.7 10.1 10.1 9.8 11.1 8.0 17.9 14.9 25.0
UPPER HOLLAND LAKE  WALDRON  WALDRON PILLOW  WARM SPRINGS PILLOW  WEASEL DIVIDE  WEST ROSEBUD  WEST YELLOWSTONE  WEST YELLOWSTONE PILLOW  WHISKEY CREEK  WHISKEY CREEK PILLON  WHITE MILL  WHITE MILL PILLOW  WHITE PINE RIDGE  WILLOW CREEK  WOOD CREEK  WOOD CREEK  WOOD CREEK  WOOD CREEK  WOLLOW  S	200 600 600 800 800 450 500 7700 800 800 700 700 850	2/26 2/28 3/01 2/25 2/25 2/25 2/25 2/25 2/25 2/25 2/2	69 20 5P 43 5P 86 20 38 59 59 5P 68 5P	23.6 6.2 7.1 12.8 14.4 31.6 5.2 10.4 8.4 14.6 21.4	33.9 11.2 11.7 20.4 20.9 30.9 7.5 9.5 8.3 21.4 15.7 27.2	33.7 10.1 10.1 - 32.4 9.8 11.1 8.0 17.9 14.9 25.0
WALDRON WALDRON PILLOW WARM SPRINGS 7 WARM SPRINGS PILLOW WEASEL DIVIDE WEST ROSEBUD WEST YELLOWSTONE PILLOW WHISKEY CREEK WHISKEY CREEK PILLON WHITE MILL WHITE MILL PILLOW WHITE PINE RIDGE WILLOW CREEK WOOD CREEK WOOD CREEK	600 600 800 800 450 500 700 800 800 700 700 850	2/28 3/01 2/25 2/25 2/25 2/25 2/25 2/25 2/25 2/2	20 5P 43 5P 86 20 38 59 59 5P 68 5P	6.2 7.1 12.8 14.4 31.6 5.2 10.4 8.4 14.6 21.4	11.2 11.7 20.4 20.9 30.9 7.5 9.5 8.3 21.4 15.7 27.2	10.1 10.1 32.4 9.8 11.1 8.0 17.9 14.9 25.0
WALDRON PILLOW  WARM SPRINGS  WARM SPRINGS PILLOW  WEASEL DIVIDE  WESI ROSEBUD  WEST YELLOWSTONE  WEST YELLOWSTONE PILLOW  WHISKEY CREEK  WHISKEY CREEK PILLON  WHITE MILL  WHITE MILL  WHITE MILL PILLOW  WHILOW CREEK  WOOD CREEK  WOOD CREEK	600 800 800 450 500 700 800 700 700 700 850	3/01 2/25 2/25 2/25 2/25 2/25 2/25 2/25 2/2	\$ P 4 3 8 P 8 6 2 0 3 8 5 P 5 9 8 P 6 8 8 P	7.1 12.8 14.4 31.6 5.2 10.4 8.4 18.4 14.6 21.4	11.7 20.4 20.9 30.9 7.5 9.5 8.3 21.4 15.7 27.2	32.4 9.8 11.1 8.0 17.9 14.9 25.0
WARM SPRINGS 7 WARM SPRINGS PILLOW 7 WEASEL DIVIDE 5 WEST ROSEBUD 7 WEST YELLOWSTONE 6 WEST YELLOWSTONE PILLOW 6 WHISKEY CREEK 6 WHISKEY CREEK PILLON 6 WHITE MILL 8 WHITE MILL PILLOW 8 WHITE PINE RIDGE 8 WILLOW CREEK 6 WOOD CREEK 9 LLOW 5	800 800 450 500 700 800 700 700 700 850	2/25 2/25 2/25 2/25 2/25 2/25 2/25 2/26 2/24 2/24	43 SP 86 20 38 SP 59 SP 68 SP	12.8 14.4 31.6 5.2 10.4 8.4 14.6 21.4	20.4 20.9 30.9 7.5 9.5 8.3 21.4 15.7 27.2	32.4 9.8 11.1 8.0 17.9 14.9 25.0
WARM SPRINGS PILLOW  WEASEL DIVIDE  WEST ROSEBUD  WEST YELLOWSTONE  WEST YELLOWSTONE PILLOW  WHISKEY CREEK  WHISKEY CREEK PILLON  WHITE MILL  WHITE MILL  WHITE MILL  WHITE PINE RIDGE  WILLOW CREEK  WOOD CREEK  SOOOD CREEK	800 450 500 700 700 800 800 700 700 850	2/25 2/25 2/23 2/25 2/25 2/24 2/24 2/24	SP 86 20 38 SP 59 SP 68 SP	14.4 31.6 5.2 10.4 8.4 18.4 14.6 21.4	20.9 30.9 7.5 9.5 8.3 21.4 15.7 27.2	32.4 9.8 11.1 8.0 17.9 14.9 25.0
WEASEL DIVIDE  WEST ROSEBUD  WEST YELLOWSTONE  WEST YELLOWSTONE PILLOW  WHISKEY CREEK  WHISKEY CREEK PILLON  WHITE MILL  WHITE MILL  WHITE MILL  WHITE MILL  WHITE PINE RIDGE  WILLOW CREEK  WOOD CREEK  SOOD CREEK	4 50 5 00 7 00 7 00 8 00 8 00 7 00 7 00 8 50	2/25 2/23 2/25 2/25 2/24 2/24 2/24 2/24	86 20 38 59 59 59 68 5P	31.6 5.2 10.4 8.4 18.4 14.6 21.4 19.0	30.9 7.5 9.5 8.3 21.4 15.7 27.2	9.8 11.1 8.0 17.9 14.9 25.0
WEST ROSEBUD 7 WEST YELLOWSTONE 6 WEST YELLOWSTONE PILLOW 6 WHISKEY CREEK 6 WHISKEY CREEK PILLON 8 WHITE MILL BILLOW 8 WHITE MILL PILLOW 8 WHITE PINE RIDGE 8 WILLOW CREEK 6 WOOD CREEK 9 VOOD CREEK PILLOW 5	500 700 700 800 800 700 700 850	2/23 2/25 2/25 2/24 2/24 2/24 2/24	20 38 59 59 59 68 59	5.2 10.4 8.4 18.4 14.6 21.4	7.5 9.5 8.3 21.4 15.7 27.2	9.8 11.1 8.0 17.9 14.9 25.0
WEST YELLOWSTONE WEST YELLOWSTONE PILLOW WHISKEY CREEK WHISKEY CREEK PILLON WHITE MILL WHITE MILL PILLOW WHITE PINE RIDGE WILLOW CREEK WOOD CREEK WOOD CREEK PILLOW S	700 800 800 700 700 700 850	2/25 2/25 2/24 2/24 2/24 2/24	38 SP 59 SP 68 SP	10.4 8.4 18.4 14.6 21.4 19.0	9.5 8.3 21.4 15.7 27.2	11.1 8.0 17.9 14.9 25.0
WEST YELLOWSTONE PILLOW WHISKEY CREEK WHISKEY CREEK PILLON WHITE MILL WHITE MILL PILLOW WHITE PINE RIDGE WILLOW CREEK WOOD CREEK WOOD CREEK PILLOW S	700 800 800 700 700 850	2/25 2/24 2/24 2/24 2/24	5 P 5 P 6 8 5 P	8.4 18.4 14.6 21.4 19.0	8.3 21.4 15.7 27.2	8.0 17.9 14.9 25.0
WHISKEY CREEK PILLON 6 WHISKEY CREEK PILLON 6 WHITE MILL PILLOW 8 WHITE PILL PILLOW 6 WHITE PINE RIDGE 6 WILLOW CREEK 6 WOOD CREEK 5 WOOD CREEK PILLOW 5	800 800 700 700 850	2/24 2/24 2/24 2/24	5 9 S P 6 8 S P	18.4 14.6 21.4 19.0	21.4 15.7 27.2	17.9 14.9 25.0
WHISKEY CREEK PILLON WHITE MILL WHITE MILL PILLOW WHITE PINE RIDGE WILLOW CREEK WOOD CREEK WOOD CREEK FILLOW S	800 700 700 850	2/24 2/24	S P 6 8 S P	14.6 21.4 19.0	15.7	14.9 25.0
WHITE MILL PILLOW 8 WHITE MILL PILLOW 8 WHITE PINE RIDGE 8 WILLOW CREEK 6 WOOD CREEK 5 WOOD CREEK 9	700 700 850	2/24	68 SP	21.4	27.2	25.0
WHITE MILL PILLOW WHITE PINE RIDGE WILLOW CREEK WOOD CREEK WOOD CREEK FILLOW S	700 850	2/24	SP	19.0		
WHITE PINE RIDGE 8 WILLOW CREEK 6 WOOD CREEK 5 WOOD CREEK PILLOW 5	850				23.7	20.8
WILLOW CREEK 6 WOOD CREEK 5 WOOD CREEK PILLOW 5		5/26	2.1			
WOOD CREEK PILLOW 5	500		€ 4	4.2	4.2	4.6
WOOD CREEK PILLOW 5	700	5 / 5 5	2.7	5.8	5.6	8.7
	960	2/26	5.3	8.0	12.6	-
	960	3/01	\$ P	8.1	10.4	-
II O O II O O O O O O O O O O O O O O O	700	5/24	8.5	7.7	13.5	13,4
WRONG RIDGE 6	800	2/25	3.7	11.9	19.2	18.3
LBERTA						
	810	3/93	5.6	17.9	18.6	:
mark markets and a second	490	3/11	4.8	13.8		8.2
	080	3/01	5.6	7.2	8.7	13.3
	660	3/01	4.5	11.6	10.8	10.3
A COMPANIE OF THE COMPANIE OF	710	3/01	3.9	9.5	8.7	-
HTCHILD CO. C. WILLIAM CO.	250 250	3/02	40	9.8	9.5	13.6
	890	3/03	7.8	11.7	4.5	6.8
	090	2/28	14	4.2	8.7	9.6
He no an	5 9 0	3/03	46	10.3	8.4	10.3
MONATE AND ASSESSED ASSESSED	740	3/01	3 5 4 1	9.0	11.3	-
IANN A CONTRACTOR OF THE CONTR	200	3/03	3 9	11.0	11.6	-
N. C.C.	400	3/03	44	11.0	14.0	14.7
DIDCOTON CONTRACTOR	300	8518	29	7.2	9.2	8.6
	150	3/02	43	11.5	12.8	13.7
SUNSHINE VILLAGE PILLOW (ALT		3/01	SP	15.3	20.3	19.8

DRAINAGE BASIN on 4 or SHOR COURSE  Onto Drash Many Content Rate Content (Inches)  RANE  Elevation of Content (Inches)  (Inches)  Last Year Annega	SHOW March 1, 1983		THIS YEAR		PAST R	ЕСОЛО
Elevision the formation Annals				Raser Content	Rater Contr	int (Inchail)
	Dr. and Elevision	at surse;	(Inchar)	(lochet)	Latt Yes	

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FERUTE 4000						
FERNIE (BC)	3510	2/25	2.1	7.7	8.9	7.9
FERNIE EAST (BC)	4100	2/25	43	14.3	15.1	14.0
FERNIE NE (BC)	3510	2/25	2.8	9.6A	10.2	9.0
FIRE DOUNTAIN (DC)	6130	2/28	99	31.6	44.5	43.1
(81)	4200	2/23	2.2	5.7A	8.3	
GLACIER (BC)	4100	2/28	5.8	20.7		5.9
GRAY CREEK LOWER (OC)	\$080	2/28			28.3	23.8
LNEEK HOPER /OCT	9590		4.1	14.8	15.4	16.0
CORP SERVE		5/58	7.0	8.55	30.8	26.9
THEREFY (AC)	5410	2/23	3.5	10.7	12.8	13.1
	3800	2/27	19	4.8A	-	7.5
KIMBERLEY MIDDLE VOR (OC)	4490	2/24	5.5	6.8	8.6	8.0
XINBERLEY UPPER VOR (OC)	\$510	5/54	3.4	9.4	11.0	10.9
MARBLE CANYON (BC)	7020	2/24	46	13.7	16.0	17.4
HORRISCE CANTON (BC)	4990	3/02	ESI	11.8	14.4	13.3
MORRISSEY RIDGE (BC)	6100	2/24	7.2	25.7	26.5	25.4
MOUNT ABBOT (BC)	6490	85/5	107	34.3	45.5	40.8
MOYIE MOUNTAIN (BC)	6360	2/28	4.7	15.2	15.1	16.2
SINCLAIR PASS (BC)	4490	2/28	16	3.5	11.6	5.6
SULLIVAN MINE (BC)	5080	2/25	33	9.3	12.0	
UPPER ELK RIVER (BC)	4400	2/27	7	2.8		12.6
			,	c • 0	6.1	6.9

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10лно						
ADDUS						
BEAR SOURTAIN (10)	4100	2/28	4.0	15.4	1.8 1	22.9
The state of the s	5400	2/25	140	59.7	61.8	
GEAR MOUNTAIN PHILOW (ID)	5400	2/25		57.9	68.1	7 3 4 7
210 JAKINGS (ID)	6500	2/25		19.4	20.2	
"SOLD CANYON (TO)	20.40	2/24	91	31.8	36.6	
BLACK MOOSE (ID) CAMP CREEK (ID)	8160	2/24	106	40.4		
CAMP CREEK (ID)	6580	3/01	5.2	14.0	พ บ • ผ	0.0
CHEEK PITTOW (IN)	0.48.4	3/01		22.1	11 9	7.0
HOURDED! GUICH (IV)	/ 250	8515	3.4	12.8	13.6	
"ONGOLDI GULCH PILLON (IN)	6250	3/01	92	11.5		_
PARK (ID)	6290	2/25		18.3	16.7	
TOTAL PARK PILLION (TO)	6200	3/01	9.2	17.9	15.3	-
KILGORE (ID) KII CARSON (ID)	6320	2/28	5.2	14.6		
KII CARSON (ID)	4950	2/24	22	5.2	11.7	
LAIMAM SPRINGS (ID)	7630	2/24	8.7	31.2	34.0	
LVEU PASS (ID)	6276		50	19.1	31.8	
C00KUU1 {   B	6360		8.0	29.0	30.6	31.0
LUDXDIIT PILLOW (FA)	6260	3/01	5.0	28.9	30.5	2   4
MODSE CREEK (10)	6860	2/24	7.6	24.4	27.3	
MDDSE CREEK (ID)	6200		5.4	16.8	21.5	
MODSE CREEK PILING (IN)	6200	3/01		17.1	21.5	
MOSQUETO RIDGE (ID)	5200	2/22	115	10 10	70.7	7 / /
MOSQUITO RIDGE PILLOW (ID)	5200	3 / 0 1	0.2	37 <b>7</b>	77 7	
					29 0	24.1
24A FELL MOUNTAIN (ID)	8720	2/25	0.7	7.4.4	7.7 4	20 /
SUNSET (10)	5540	2/27	101	35.5A	39.1	32.6
SUNSET PILLOW (10)	5540	3/01	SP	30.8	35.8	-
SUNSET (10) SUNSET PILLOW (10) TARGHEE PASS (10)	6980	2/25	4.7	T4.4	14.1	13.6
VALLET VIEW (10)	6680	2/25	48	16.0	14.6	T5.6
WHITE ELEPHANT ([D)	7710	2/25	69	23.6	25.3	18.4

SNO₩ Harch 1. 1983		RASY ZINT		IPAST II	II.ÇORO
ORAMIAGE BASIN INdios SHOR COURSE	Date Snow Depth		Maier Content	Water Conti	mi (inches)
IIAME Elevamon	né Survay	(lechar)	[locher]	LIII TI P	Antinga

#### NIKOYW

OALD MOUNTAIN (WY)	9380	2/28	5 9	17.9	12.2	19.3
BALD MOUNTAIN PILLOW (WY)	9380	8515	S P	15.5	15.2	-
OURGESS R.S. (WY)	7880	2/28	5.3	5.8	5.1	7.1
BURGESS R.S. PILLOW (WY)	7880	2/28	5 P	8.7	5.5	_
CANYON PILLOW (WY)	7940	3/02	S.P.	12.1	15.2	14.3
EAST EMIRANCE (WY)	6960	2/27	3.5	9.0	12.1	9.7
EVENING STAR PILLOW (WY)	9200	3/01	SP	13.4	-	-
FIVE SPRINGS FALLS (WY)	7620	2/28	1.7	3.5	4.0	7.3
LAKE CAMP (WY)	7780	2/27	3.5	7.6	9.6	8.3
LUPINE CREEK (WY)	7380	3701	3 1	8.0	7.7	9.9
NORRIS BASIN (WY)	7500	3/01	3.5	7.7	10.5	10.1
OLD FAITHFUL (WY)	7400	3/01	5.1	13.1	13.7	-
PARKERS PEAK PILLOW (WY)	9400	3/01	SP	17.8	23.2	29.7
SYLVAN LAKE PILLOW (NY)	8420	2/27	SP	17.3	21.8	-
SYLVAN PASS (WY)	7100	2/27	39	10.2	16.4	12.2
THUMB DIVIDE (WY)	7980	85/5	5.9	15.4	20.7	18.2
TOGWOTEE PASS (WY)	9580	3/01	7.4	22.5	31.4	25.2
TROUT CREEK PILLOW (WY)	8400	3/01	SP	4.7	-	
WOLVERINE (WY)	7650	2/28	3.8	10.6	13.6	10.7
WOLVERINE PILLOW (MY)	7650	2/28	SP	9.5	11.6	-
YOUNTS PEAK PILLOW (NY)	8350	3/01	SP	11.8	20.8	19.5
LADIAL DE LEVE LICEAN CALL	V-70					

Availage based on 1963-77 period. A - Aesial observation; water content estimated. SP - Snow Pillow observations; water content only.



Light snowpacks in some areas and mild temperatures have been favorable for wintering wildlife.

# Columbia River Drainage

STREAMFLOW FORECASTS	THIS Y			#1 CO4D		YEAR		RE CORD	THUS	YEAR	PAST	n e cont
	FORE		FHOUSAND	NEWE LEED	1	CASI	FROUSAHO	VCBE LEEL	-	ECAST	THQU5AND /	ACRE FEET
BASH STREAM OF OF PORECAST POMT	Azir Zini	Airiage	Stirries.	414-3)*	Thousand Acre Fers	Pricent of Astropi	Nazi Zeai	A11.171	Thouse a Azir Fire	Parcent of Assisse	Lapited	Astragi
PE LIGO	A	pril -	Septembe	r		April	- July			April	- June	
KOOTENAI RIVER below Libby Dam (1)	6,650	92	7.017	7,246	5,670	92	5,878	6,178				
FISHER RIVER near Libby	220	81		270	205	81		253				
YAAK RIVER near Troy	490	91		537	465	90		514				
KOOTENAI RIVER at Leonia (1)	8,350	94	8,643	8,883	7,260	94	7,413	7,727	5780	94	5,921	6,150
INFLOW MOULTON RESERVOIR or BUTTE (Million Gallons)					210	73	360	286	190	73	328	260
WARM SPRINGS CREEK AT MEYERS DAM near Anaconda (2)	40.7	80		50.7	33.0	80		41.2				
FLINT CREEK hear Southern Cross (3)	13.9	75	24.6	18.5	11.5	75	20.0	15.4				
FLINT CREEK below Boulder Creek (4)	58.8	76		77.6	46.0	75		61.3				
INFLOW LOWER WILLOW CREEK RESERVOIR near Hall (5)	11.8	70	15.9	16.9	11.1	69	15.1	16.0				
MIDDLE FORK ROCK CREEK near Philipsburg	67.0	85	-515	78.8	60.5	85		71.1				
NEVADA CREEK near Finn	16.5	70		23.6	15.1	69		21.8				
BLACKFOOT RIVER near Sonner	790	78		1,017	710	77		920	610	77		794
CLARK FORK RIVER above Milltown (6)	715	8.5		843	620	85		730	530	86		613
CLARK FORK RIVER above Missoula	1,505	81	2,260	1,859	1,330	81	2,038	1,651	1,140	81	1,645	1,408
WEST FORK BITTERROOT RIVER near Conner (7)	153	82	- /200	187	140	81		172	, , , , ,		-,	2,100
BITTERROOT RIVER near Darby	455	76		602	420	76		552	370	77		480
SKALKANO CREEK near Hamilton	47.5	83		57.4	41.5	83		49.8	0,4	* *		700
BURNT FORK CREEK near Stevensville (8)	32.6	84		38.8	28.5	85		33.6				
BITTERROOT RIVER at Missoula (9)	1,165	76		1,543	1,070	76		1,416	930	77		1,211
CLARK FORK RIVER below Missoula	2,670	78		3,405	2,400	78		3,069	2,070	79		2,618
CLARK FORK RIVER at St. Regis	3,510	78	5,715	4,521	3,150	77	5,292	4,078	2,690	77	4,309	3,492
NORTH FORK FLATHEAD RIVER near Columbia Falls	1,750	89	51112	1,969	1,590	89	3,272	1,782	1,350	90	4,309	1,498
MIODLE FORK FLATHEAD RIVER near West Glacier	1,560	82	2,083		1,430	82	1,925	1,750	1,220	83	1,544	1,470
SOUTH FORK FLATHEAD RIVER near Columbia Falls (10)	1,850	80	, –	1,911	1,720	80	2,428	2,159	1,510	80	2,034	
FLATHEAD RIVER at Columbia Falls (10)	5,280	83	2,559	2,302	,	84	6,080	5,827	4,200	85		1,884
SWAN RIVER near Big Fork	575	84	6,549	6,330	4,900 505	85	0,000	596	4,200	0.0	4,990	4,964
FLATMEAO RIVER near Polson (11)	6,180	84	0 00-	681		84	7,323	6,806	4,900	0.5	5 010	E 770
CLARK FORK RIVER near Plains (11)	9,850	80	8,005	7,394	5,720	_				85	5,910	5,779
THOMPSON RIVER near Thompson Falls	236	90	14,103	12,340	8,960	80	12,939	11,222	7,600	80	10,447	9,507
PROSPECT CREEK at Thompson Falls	124	87		263	211	90		234				
GLARK FORK RIVER at Whitehorse Rapids (12)	11,100			143	115	86		133	0 (10	0.0		
district tour never at mattenotise naptus (12)	11,100	81		13,781	10,100	81		12,519	8,610	81		10,633

- (1) Adjusted for storage in Lake Kosesmuss.
- (21 Adjusted for storage in Silver Loke, diversions to and pumping from Georgetown Lake.
- (3) Adjusted for storage in Georgetown Lake, diversians from and pumping to Silver Lake.
  (4) Sum Flint Creek at Maxville and
- Boulder Creek at Maxville.
  (5) Sum of Marth Fork Lawer Willow Creek
  near Hall and Sauth Fork Lover Willow
- Greek wear Hall.

  (6) Difference in observed flow Clark Fork above Missoula and Blackfoot wear Bonner.
- (71 Adjusted for starage in Painted Rocks Reservoir. (8) Adjusted for diversian into Sunset Highline
- (9) Difference in observed flaw Clark Fork above and belaw Misaaula.
- (10) Adjusted for storage in Hungry Horse Reservoir.
  (11) Adjusted for storage in Hungry Harse Reservoir and Flathead Lake,
- (12) Adjusted for storage in Huagry Horse Reservoir, Flathead Lake and Moxaa Rapids Reservair.

ALL FORECASTS PREPARED IN COOPERATION WITH THE NATIONAL WEATHER SERVICE

	i i el av "Pool, Fi ng" With Respect		
Ī	Fly=P	batte	1_
	Savina Savion	Lara Seaton	ĮS

STREAM IN AREA	Sering Serion	Seaton
Tobacco	Avg	Avg
Little Bitterroot	Avg	Fair
Mission Valley	Avg	Avg
Flint Creek	Fair	Fair
Upper Clark Fork	Fair	Fair
Nevada Creek	Fair	Fair
Blackfoot	Fair	Poor
West-side Bitterroot	Fair	Fair
East-side Bitterroot	Fair	Fair
Bitterroot River	Fair	Fair
Lower Clark Fork	Fair	Fair

WATER SUPPLY OUTLOOK COR

# Irrigation shortages expected

Most drainages are forecast to produce below average spring and summer runoff. Only in the northwest are streamflows expected to be near average. Most streams should produce 15 to 25 percent less runoff than normal.

Irrigation water supply shortages are expected to develop in late June to early July due to lack of good high elevation snowpack. The extent of these shortages will be somewhat dependent on mountain snowfall during the next 2 months.

Irrigators not having stored water or good water rights, may want to consider alternatives to minimize the impact of pending short water supplies.

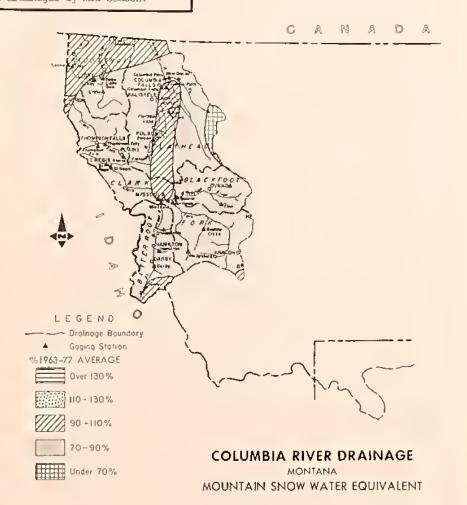
# Headwaters below average

Snowpack percentages deteriorated this past month in the northern part of the drainage while southern areas remained about the same. All headwater areas have less than average amounts of water stored in the mountain snowpack. Northern drainages continue to show better snow conditions than do the southern watersheds.

The weather pattern over the last 2 months has not been favorable for good mountain snowfall. If the next 2 months continue to have the same weather trends, shortages of water supplies can be expected in most drainages by mid-season.

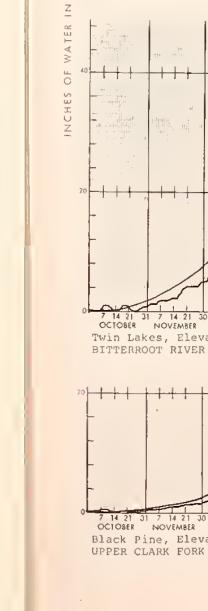
#### SUMMARY of SNOW MEASUREMENTS

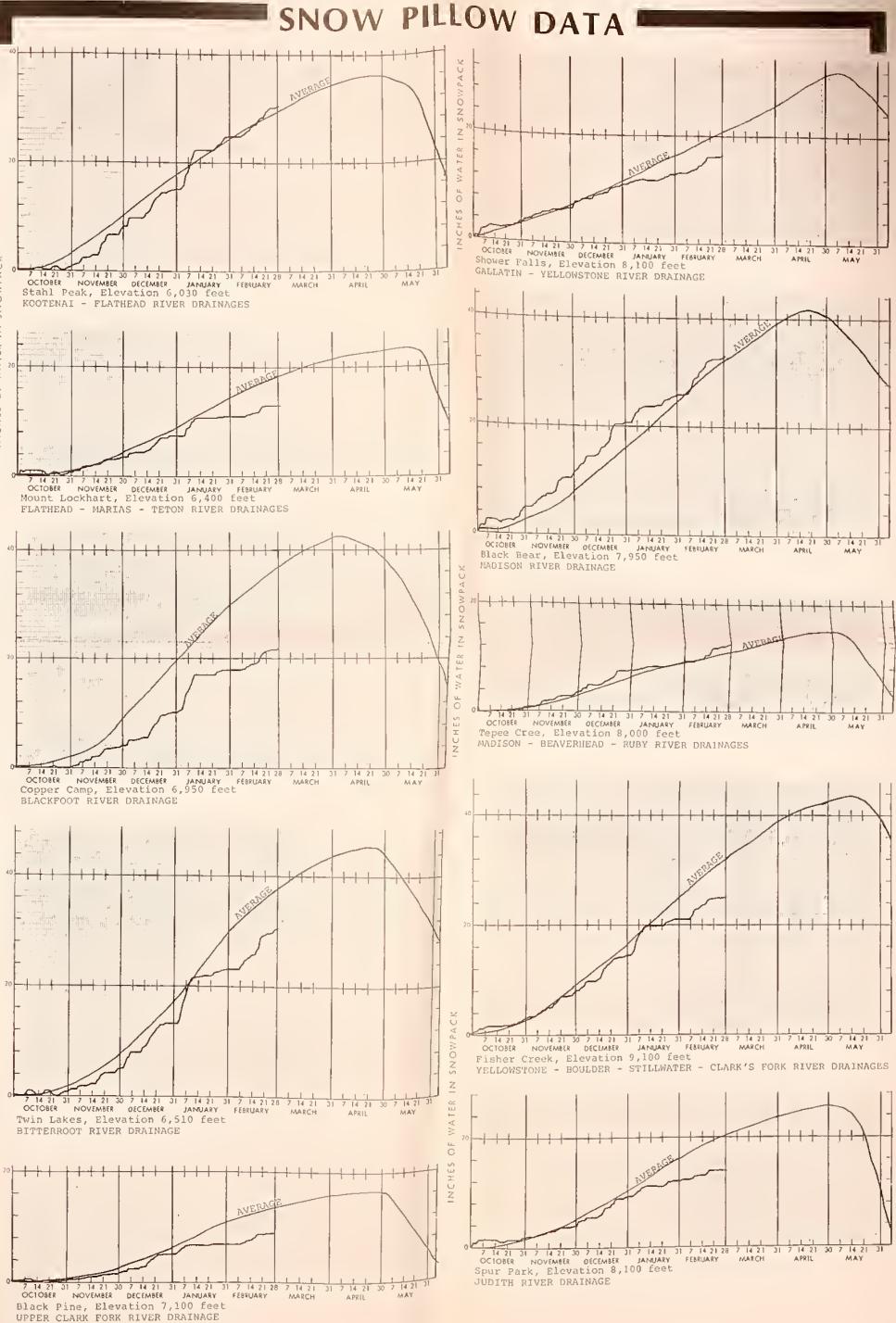
RIVER BASIN and/or	Number of Courtai		FACENT OF
SUB-WATERSHED	Airaraj ad	Latt Yzez	Avmaja +
East Kootenay/BC.	19	79	85
Kootenai/Montana	26	87	91
Kootenai above			
Sonners Ferry	45	84	89
Little Bitterroot	5	74	75
N. Fk. Flathead	10	94	92
M. Fk. Flathead	9	75	77
S. Fk. Flathead	12	81	84
Swan	9	86	88
Flathead	45	. 84	85
Stillwater &			
Whitefish	5	75	75
Clark Fork above			
Blackfoot	35	74	77
Blackfoot	21	70	75
Upper Clark Fork			
above Missoula .	56	72	76
Sitterroot	17	66	81
Lower Clark Fork			
below Missoula .	19	82	86
Clark Fork (Total			
w/o Flathead)	92	74	81
Pend O'Reille			
(Clark Fork &			
Flathead)	137	78	83
Columbia (Pend			
0'Reille &			
Kootenai)	182	80	85





Good early season snowfall followed by colder temperatures created a depth hoar layer in the bottom of the snowpack in some areas. This lovely bonded layer, sometimes referred to as "sugar snow," and lack of bonding within the remainder of the snowpack has helped produce numerous avalanches this season.

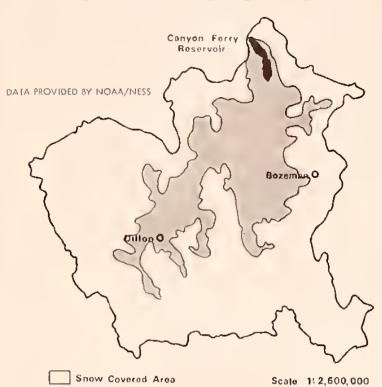




#### RESERVOIR STORAGE (Thousand Acre Feet) ENDOFFMATH February 28, 1983

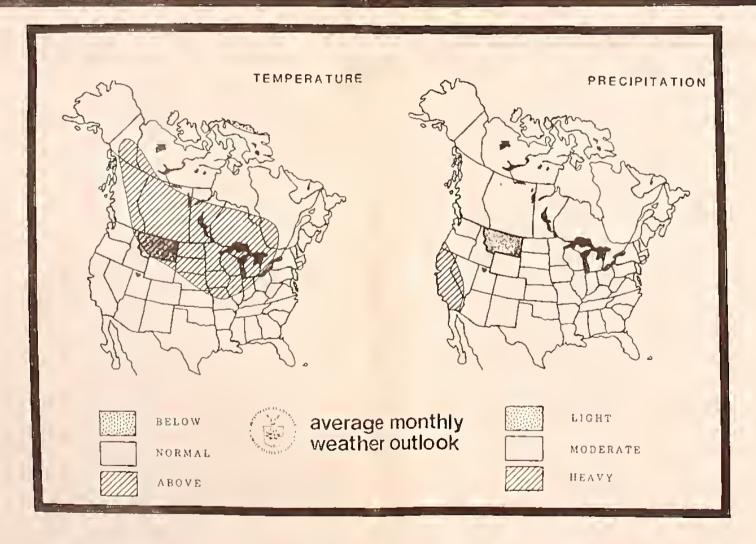
	RESERVOIR STORAGE (Thousand Acre Peer) Endorsonth Pedruary 20, 1903						
	Basin or Singer	RESERVOIR	CASTON	This Yes-	Shirin	Average	
COLUMBIA							
	Kootenai	Koocanusa	5,748.2	2,189.8	2,203.0	2 222 -	
	Flathead	Hungry Horse	3,451.0	2,831.0	2,327.0	2,200.0	
		Flathend Lake	1,791.0	752.8 31.2	744,4	994.6	
		Comas (4)	45.2		22.6	21.9	
		Mission Valley (8)	100,3	43.7 26.6	24.8 29.6	38.7	
	Clark Fork	Georgetown Lake	4.9	1.6	29.0	25.6	
		Lower Willow Creek				1.7	
		Nevada Creek	12.6	6.9	8.0 310.9	5.6	
		Noxon Rapids	334.6	315.4	310.9	299.1	
	Bitterroot	Painted Rocks	31.7			17.4	
		Conio	34.9	14.6		13.6	
MISSOURI							
	Beaverhead	Lima	84.0	51.4	26,2	40.2	
		Clark Canyon	257.2	165.0	160.1	137.9	
	Ruby	Ruby	38.8	27.6		27.7	
	Madison	llebgen Lake	377.5	273.0	273.8	243.3	
		Ennis Lake	41.0	30.7	31.6	35.4	
	Gallatin	Middle Creck	8.0	3.8	3.8	3.6	
	Missouri	Canyon Ferry	2,043.0	1,691.0	1,535.0	1,606.0	
		Hauser & Helena	61.9	63.0	63.0	60.6	
		Lake Helena	10.4	10.9	10.9	10.0	
1		Holter Lake	81.9	81.0	79.6	64.6	
		Fort Peck Lake	18,910.0	15,640.0	14,100.0	15,370.0	
	Smith	Smith River	10.6	8.6	7.3	7.2	
		Newlan Creek	12.4	8.7	10.1		
	Musselshell	Bair	7.0	5.2	3.8	4.9	
I		Martinsdale	23.1	18.3	11.3	9.9	
		Deadman's Basin	72.2	63.1		49.4	
	Sun	Gibson	99.1	61.8	50.3	44.6	
		Willow Creek	32.2	24.2	23.8	21.8	
		Pishkun	32.0	19.9	19.6	16.4	
	Marias	Lower Two Medicine	11.9	***		5.8	
		Four Horns	19.2			13.1	
		Swift	30.0	14.9	10,0	15.4	
		Lake Frances	111.9	85.1	77.8	71.0	
	Milk	Elwell (Tiber)	1,347.0	693.7		538.9	
		Beaver Creek	3.5	3.1	2.0	1.5	
		Fresno	127.2	13.2	31.5	66.4	
		Nelson	66.8	44.4	28.8	41.9	
		HUDSON BA		0.5	10 1	20.5	
	St. Mary's	Lake Sherburne	64.3	35.8	18.1	22.5	
	YELLOWSTONE						
	Stillwater	Mystic Lake	21.0	3.9	3.1	7.2	
	Clark's Fork	Cooney	27.4	17.6	1.0	15.3	
	Tongue	Tongue River	68.0	18.4	18.5	37.0	
	Bighorn	Bighorn Lake	1,356.0	962.6	859.7	527.8	
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#### SATELLITE SNOW COVER



# MISSOURI RIVER BASIN Above Canyon Ferry Dam

DATE	PERCENT SNOT COVER	AVERAGE SNOWLINE ELEVATION IN FEET
November 14, 1982	81	5290
November 1982	96	4300
November 24, 1982	95	4380
December 24, 1982	100	3800
January 18, 1983	76	5540
January 25, 1983	71	5770
February 3, 1983	76	5540
February 24, 1983	72	5720



#### AGENCIES AND ORGANIZATIONS COOPERATING IN MONTANA SNOW SURVEYS

GOVERNMENT AGENCIES

VERNMENT AGENCIES

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Department of the Environment

Atmospheric Environment Service

Water Management Service

Dritish Columbia Ministry of Environment

Inventory and Engliceering Branch, Hydrology Section

Alberta Environment

Technical Services Division

Federal
Department of the Army Department of Agriculture -

Department of Commerce

Department of Interior

- Corps of Engineers
- Porest Service
- Soil Conservation Service
- National Environmental Satellite Service
- National Weather Service
- Burean of Indian Affairs
- Fish and Wildlife Service
- Geological Survey
- National Park Service
- Dureau of Recimmation
- Bonneville Power Administration

Department of Energy

STATE AGENCIES

Montana Conservation Districts
Montana Department of Fish, Wildlife and Parks
Montana Department of Natural Resources and Conservation
Montana State University - Agricultural Experiment Station
University of Montana - School of Forestry

PRIVATE ORGANIZATIONS
The Annoonda Company
Blg Sky of Montana
Butte Water Company
Flathead Valley Community Coilege
Montana Power Company

Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.